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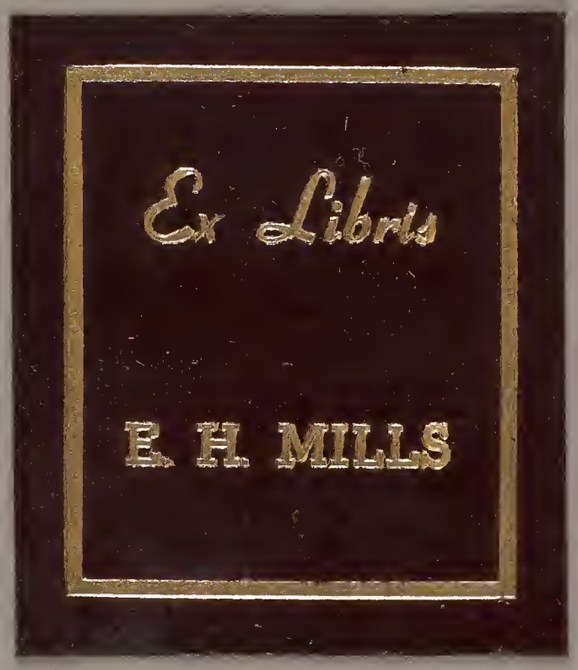

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1 Of Natures obvious laws & processes in vegetation.

2 ~~That vegitation of mettalls is described to be don by the same laws by~~ ye universall consent of the magi

2 That mettalls vegetate after the same laws? provid transitorily & from ye circumstances observed by miners; from the consent of ye Sophy wch one another of wth natures process & ye strange dispositions of all other chymists from both nature & one another. And ye corruptibility of all things

3 That vegetation ~~may be~~ although promoted by art is naturall.

4 That natures process in vegetation are best understood in ye simplest p

3 A description of their vegetation in the earth

4 A description of their vegetation in a glasse. & that this is as much naturall as tother

5 The circumstances in wch they agree wth plants & animalls. And of not how by nature & not

6 That vegetation ~~[illegible]~~ is ye sole effect of a latent spt & that this spt is ye same in all things only discriminated by its degrees of maturity & the mixtures This instanced in mettalls &c. In fermentation of wine in Nitre, in Antypathys in ye contagionus of putrefaction In vegetables & animalls of ye actions & passions of grosser matter & how far that is common.

7 Of the ~~effects produced by~~ the degrees of maturity in all kingdoms mixtures & putrefaction con ~~conjunction, vegetation &c & how they~~ is only observable in mineralls ~~further in vegetables & animalls~~

9 How things conserve their species & how a tree might be conserved & nourished An the glass & that its probable those mettalline trees in the earth grew after this manner & why the continuall mutations in mans body are visible in ye same mineral as found divers mettalline trees

10 Of seed & propagation in number bulk & quality. Why of a section of a double libaty. Why the product is sometimes male & sometimes female

11 Of protoplasts yt nature can onely nourish, not form them, Thats Gods mechanicall works of nature

12 Why the two Elixirs are the most ~~exacting~~ amicable & universall medicine to all things what ever

Notes. ye of agreement less different in maturity the quicker union & work, as mineralls; & hence animalls easy to imbibe gradually then give ye nourishment at once. 3 tis a safer work 2 ye lesse nourishment yt quicker & safer concoction. 4 Heterogeneous impurityes are hurtfull 5 a gentle heat. 6 nature ever begins with putrefaction or fermentation whereby there is an intimate union & contexture of spts 7 After putrefaction ye work is greatly secure in yt is ye main danger of miscarriage. Hence diseases chiefly in the stomach & blood 8 putrefaction exerts a spirit, & makes an intimate mixture. 10 After the form of con junction vegetation admits of noe interruption. by cold yt compositus dyes & by excessive heat. 11 Vegetation must be performed in humido. 12 the motion stays at the maturity of ye first movers 12 sudden heats & colds prejudice maturity. 13 putrefaction separates feces. Hence urin gall &c 14 Totall putrefaction makes a black stinking rotten 15 after conjunction the matter is apt to grow into all figures & colours though transitory because yt motion is not yt terminated. 16 In ye same can severall mettalls are found all veh vegitate distinctly. 17 That salt chiefly excites to vegetation 18 That in ye first days of yt stone green is ye only permanent colour & so in ye least malleable tables. 19 That sometimes mettalls grow like trees in yt earth. 20 That nothing has so great power on animalls as mineralls which not only the Alkahest to destroy & ye Elixir to conserve But their operations in common chymicall physick &c in springs &c & therefore since we live in ye air where their most subtile vapours are ever dispersed wee must of necessity have a great dependance on them, either healthfull & sickly yeares, ye barrenes of ground &c mines &c

they therfore unite wth ye bodys & become pt of ye wch they could not doe if they had not a principle of vegetation in them & that of ye same disposion wth ye matter of ye rest of ye bodys. Therefore ye bodys vegetah as they doe in a glas. 21 They are conjoyd like male & female. 22 The female seed is ever in greatst proportion 23 They are fertilizd by emission of seed. 24 ye Elixir is multiplyd in verbis & ye child is more vigorous as long lived ye parents 25 There is a time of conjunction after fermentation & digestion 26 all that time ye matter dys not though ye matter cool for then birds lay their eggs 27 after ye time it dys if it cole

Dissimilitudes. 1 They retaine not constant form, ye bodys a constant one. 2 They are augmented in vertue as well as bulk, wch ye bodys are not. 3 They grow not without a totall decay & putrefaction, wch is beyond ye power of nature to make ye bodys doe. Resp: It is an infant generating from ye mixture of male & female seed 4 They grow without air, wch nothing else can doe 5 by growth they attain a faculty of communicating their vertue to others of wch their can be no instance in other vegetables. 5 They attain a supereminent fixedy in their whole substance wch noe other vegetable can. 6 They can convert 2 or 3 ray 10 or more times their owne weight of nourishment at once. Resp: they are mutually nourishment or ferment each to other. Tho their ought to be most of ye female seed. 7 Every pt of the whole is sperme, in other animalls a very small portion

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Of ye production of ye upper region from minerals. 1 How metalls discolo in divers liquors to a saline or vitriolate substance. 2 Much more ought their fumes while in as subtile & volatile a condition as water it selfe, within they happen to pervade water to converte wth its pts & impregnat it after the manner of salt or vitriol. 3 They are immediately deprivd of vegetation by the coldness of ye water. 4 Hence they are much more alienate from metalls then solutions of metalls & cannot be reduced by destillation as the other may, being converte in a highly volatile & angulated condition. 5 By their lying in ye water in vicissitude of hot & cold congeal compacte & from a volatile to a fixt condition. This indeed they are changed in ye measure from a spirituall to a corporall in Gur & minerall coverts in Corall & slimy juices in Niter & Tartar in salts laid in ye Rivers of salts wch abound in vitriolls, 6 By the acid exhalations hardning they are so much more alienated from a metalline stat & made so difficult to be reduced back that they may well be thought as differing as salts & vitriolls. Since therefore they are not vitriolls they must be salts. This is ye sea impregnated with salt, & that most towards the equator where most fumes are raised. And this conclusion seems necessary for &c. 7 This salt is a concert of all sorts of metalline fumes not ever becaus all sorts pervade ye sea & are mixed promiscuously. Hence the difficulty of precipitating it the sea is perpetually replenished wth fresh vapours it cannot be freed from a saline tast by destillation, that salt arising wth ye water wch is not yet indurate converted to a grosser body. *Moving up & down in the water they associate into little masses as they chance to meet & compact; & so change in form measure from a spirituall to a corporall, from a volatile to a fixt condition such as is ye salt in destillation they grow not only a grosse salt left behind but also a subtile spt wch upon agulated arises & since salt. And this will appear more then a conjecture by considering that their corpus clusters have a propensity still to associate into greater clusters for by evaporation they will convene into pritty larg christalline cubes wch indurate more & more in the sun like they becom of a stony consistence insoluble in water: Their propensity to associate wth one another: as any solid substance they

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may appear also by the dulcifying of water in its passag through sand for as salt will crystallize upon sticke put into water especially if ye water be agitated, soken it would not otherwise christallize, soe salt which is the marine sea would not christalize yet by the water motion through sand it is brought by little to settle on the sand & that purity as well as the grosser salt. Analogous to this is the generation of Tartar out of wine by the gradual association of subtler parts into grosser clusters the they at last coagulat into that stony concrete wch contains copiously the most fixed of salts. Another instance is in vapors coagulating into clouds.

8 In like manner the said watry vapors meeting wth water or watry vapours in mountains & cavitys of ye earth may concrete into the same or other sorts of salt according to ye nature of the fumes ascending thro. But therefore that And after ye same manner they may associate themselves with vapors in the air & impregnate rain water And where they meet with convenient subtances to rest upon as some sort of rock & walls & most earths in ye uppers crust of the earth there they may associat in grosser christalin forme (soe other way then they would coagulate in water upon ye sides of ye vessel or sticks thrown into it) & so constitute ye salts wch find in such places

9 But if it is to be observed yt fumes may joyn wth fumes after ano ther more intimate manner then they will doe wth liquors as may be seen in subliming many things together thus & if you should distill of ye spirits alone & dissolve manner wth their spirit then subtlimed wth salts mixed in another it in the liquor So these mineral fumes meeting wth ye subtile invisible vapors insensibly & by degrees will concrete wth them after another manner then they doe & wth wth water or the same vapors when they begin to concrete into water & becom visible by reason they are of one consistence & drowned clouds. And there concretions ought in reason when they associate into a saline & form so be of a more open & subtile constitution texture & constitution such as is of a nitre not is it strange yt so slight causes should produce so different salts as ☉ & ☽ if were consider yt ye first salts left in ignition returns to ☉ by dissolution, yt ☽'s vertue is impaired by refining, & yt it is further confirmed by ye affinity of yt spt wth nitre. yt is ye ferment of fire & all vegetables ye other most apt to take fire & most promoting vegetation of all salts. Hence its appran why ☽ is most found without common salt because yt air is replenished wth subtile vapors (yt is small drops of water) as well as subtil exhalations of ye same kind wch subtile causes ☽ & when it thickens ☉. Hence also little or not ☽ is in ye sea & so it may receive nitre from rivers but ye proportion is inconsiderable compard to all those vapors yt arise into it plentifully & these fumes do arise, & they will abide appear non then conjecture by considering wth water in a pellucid form & therefore appear in evaporation of a saline forme? they must therefore produce something like salt copiously 5 there are not such poducts but ☉ & ☽ generally found. 6 These are generally washd down by ye descent of water Hence ☽ is most copious in hollows & dry places, hence also the sea is salter yn the earth & those salts would therefore soone vanish if they were not constantly new generated

& this is further confirmed by their bee plentifully produced in places where there was none before & where they could not be had but out of ye vaporous air may that it descends with rain yet in saline form it descends & is too gros to ascend wch [that is noe stranger for it to precipitate out of vapor upon work yt out of water upon the sides of a vessell.] Salts therefore constantly generated & that out of a most subtle vapor yt ascends wth as fatt heat of water. nor is it to be thought that this vapor or these salts have noe other fountain but ye upper crust because yt would soon be exhausted. Since therefore mineral fumes wch with water engage into a saline form & salts are constantly made fumes & noe fumes so copiously ascend as mineralls ones nor noe salts are so copiously generated as ☿ & ☉ wt can one be but ye product of ye other. [Hence sea salt precipitates on sand & soe is constantly worked down as new is generated. & yt wt water descend with ☉ ascends without it therefore ye sea grows noe salter.

Of sal ✶. Sal gemmæ &c. alume &c

How salt turns to a hard stony pellucid substance insoluble in water whence sand christall & all pellucid stony concretions are produced & glorious gemms also if the matter be pure & pervaded by pure & variously colour'd metalline fumes before it be hard. This instanced in ye converting christall to rubys or other precious stones by ye elixir. not water converts to stone of Gur & wood petrification by water wch congeals in ye pores to stone

That clay wch is a great ingredient of this upper crust is nothing but stone powdered. that salts may by putrefaction generate another sort of black fatt rotten substance the most fertile part of this upper crust & ye truest matter out of wch vegetables are extracted & into wch after death they returne. And this confirmed in that nothing promotes fermentation & putrefaction more y^n salts wheras they are incited to it, they are alone as I may say dead & have noe active principle of vegetation in them till they be incited to it by other substances that are in a live & vegetating state of what they are mixed wthall & hence it is that ☿ where nature is not powerfull enough to incite them to action they, on ye contrary retard & hinder her working. And thence salt meats are so slow in putrefaction & so hard to digest. But if their saltish principle can be once exalted it stores it self more vigorously. Hence ☉ seemes ye most fertile of mineralls & less powerfull to conserve meats because not so close bound up & difficult to putrefy. Hen noe whither ye preparation of salts by putrefaction if it can be truly attained would not prove a noble way of Physick

2 If ☉ts wch are a meane twixt ye mineralls & other kingdoms will vegetall why may not metalls & that as much more powerfully then ☉ts as ☉ts doe ye other earth. 3 may since metalls may putrefy into a black fatt rotten stinking substance why not salts also. And soe much for salts, stones, clay, & fatt mold, the chief ingredients of this upper earth

Cls for water it is to be observed how the Alcahest (a mineral spt of ye same root wth that wch constantly ascends & pervades all things) only prepared by ye philosopher resolves all these substances into water. whence it appears not only that they have one common matter but ye ye mineral sp pervading all things may doe the like in some measure to them. 2 why what was dry & grosse may a great pt of it by putrefaction relate to water. A carcas if distilled before putrefaction will leave a great deale of fixed earth but if it be laid in the warme sun & open air to putrefy it will resolve & exhale almost all of it in time into fumes

(and putrefaction resolves substances not only into water but oyle also as may be seen by their fatness & spt as in ye fermentation of beer [yea & airs two as is evident from ye swelling & boiling]

Now this changes of ye minerall spirit ~~is done by~~ into salt stones water &c being done to all or most of them by gross mechanicall ways without vegetation or only by severall transpositions of pts, they seem to be so many violations done to ye metallick nature (whose proper action in its species is only vegetation) & so render the reduction of them back to that nature a very difficult work. Tis a work not to be done by vegetation

Now these things thus produced salt stones earth water &c seeme so alienate ~~vegetation~~ from ye metallick nature yt one would scare ~~forbear~~ think they look their rise thence, nay they are at first enmity with & if mixed do hinder or destroy ye work. But ye reason's manifest. for being changed into these substances not by vegetation but for ye most part only by a gross mechanicall transposition of pts, they are to be reduced back by the same way, not by vegetation but by the same mechanicall ~~vegetation~~ transposition till they be reduced back to their first order & frame, Since therefore vegetation is ye only naturall work of metalls & the reduction of these is besides ye work & yet these cannot vegetate as they doe till they be reduced, they must of necessity hinder their working & to be counted heterogeneous. for it will not comply will disturb ye acting.

Yet ye reduction of these is possible to be performed by mechanicall ways unravelling their production. water by ye suns heat & by ascention & descention will yeild earth as hath been tryed by distilling it often, also standing water will putrify by the suns heat, corrupt & let fall a faecal earth & that successively without period. Out of these earths may be extracted a salt. This salt may be brought to putrify & ye minerall spt thereby set loose from ye water with wch it was concreted & so returnes to ye same state it had at its first ascent out of ye earth yt is to ye nearest metallick matter & (though debilitated by these changes) yet if pervading ye earth when other metalls vegetate might enter them & by degrees recover their metallick life & metalline form.

Air (by wch I mean not vapours) Byt ye wch cold will not condens to wat
may be generated 1 out of water by freezing it. 2 by out of saline or vitri
olate spirits by their ebullition when poured together. 3 out of salts & vitriolls in
the drawing of their spirits, 4 out of metalls & soe other substances by corroding them with acid liquors
as aqua fortis. (hence poyson swells a man) 5 by fermentation. Hence ebullition
flying of bolle bear &c. swelling after a shroake. In generall by any means wher
by parts of a body are set a working among themselves. (wch seems to argue
an agent in freezing.) that thereby ye constringed aire may be set loos wch intimats
the earthly substances to be but Æthereall concretions that they so easily
approach towards it again. Of ye reduction of aire to a gross body & hence but gen in-
stance & yt in ye stone wher during ye fits solution much air is generated, enough to burst
a weak glas wch yet returns after to ye stone again

By interrvall dissolutions & fermentations wch is constantly a very great quantity of air
generated wch perpetually ascends in the a gentle motion (as is very sensible in mines)
being a vehicle to minerall fumes & watry exhalations vapors, raying up the clouds
& still (protruded by ye air ascending under it) riseth higher & higher till it struggle into
ye ethereall regions, Caming also with it many other vapors & exhalations of which
the clouds too when they happen to be so high as to loos their gravity. The quantity
of air constantly generated may be estimated by ye quantity of rains yt fall of
water ascend wch are as insensible as of ye air. But better by the quantity of
air compared to its ascent. Or if it be supposed to rise a mile in 3 or 4 days wch
may be with a very gentle & insensible motion: that would amount to 5 foot
water in depth round ye earth. This constantly ervading for soe ye Æther will be
compast thereby & so forced continually in & through the earth & waters & air can
& then by gradually condensed & interwoven with bodys it meets there. but in its descent
it endeavours to bear along wt bodys it passeth through, that is make them heavy & this
action is promoted by the tenacious elastick constitution whereby it takes ye greater hold on
things in its way; & by its vast swiftness. Soe much Æther ought to descend as air & ex
halations ascend, & therefore ye Æther being by many degrs more thin & rare than air
(as air is ye water) it must descend soe much the swifter & consequently have soe much
more efficacy to drive bodys downward than air hath to drive them up. And this is
very agreable to nature proceedings to make a circulation of all things. Thus
the Earth resembles a great animall, or rather ingenium vegetabile drawes in ethereall breath for its dayly
refreshment & transpires again with grossr exhalations, And according to the
condition of all other things living ought to have its times of beginning youth old
age & perishing. [This is the subtil spirit wch searches ye most abstruse recesses of all
grosser matter which enters their smallest pores & divides them more subtilly then any other menstruum
not wor. (not after ye way of common menstruums by rending them violently asunder &c) this is
Natures universall agent, her secret fire, ye material soule of all matter wch being constantly transfused
& principle of all vegetation. The material soule of all matter wch being constantly transfused
from above pervades & concreats with it into one form & then if inabled by a gentle
heat actuates it makes it vegetate & enlivens it but so tender & subtile yt it wholl
at to vanish at ye least excess and (having over learn to act) to cease acting for wor
of congeale in ye matter at ye defect of heat. Had this perhaps a fruitfull
great pt if not all the mols of sensible matter is nothing but Æther congealed or
interwoven into various texturs whose life depends on that pt of it wch is in condit
state, not wholy distinct & lose from it like ye Æther in wch it swims as in

a fluid not wholly joynd & compacted together wth it under one forme but in some degree condensed unitd to it & yt remaining of a mixt nom rare hindring publike disposition & so this seems to bee the principle of its acting to resolve yt body & bee mutually condensd by it & so mix under one form being of our world together like the compositus attain yt same state wch yt body had before solution. Hence 1 yt earth needs a constant fresh supply of ether. 2 Bodys are sublimed by solution

Note that tis more probable yt ether is but a vehicle to some more active spt. yt bodys may bee converted of both together, they may imbibe ether as well as air in generation & in yt ether yt spt is engaged. This spt perhaps is yt body of light because both have a prodigious active principle, 2 because all things may bee made to emit light by heat, 3 yt same cause (heat) banishes also the vitall principle. 4 To suitably wth infinite wisdom to devise effects from yt not to multiply causes without necessity 5 nor heat is so pleasant & quick as without heat sans light 6 light & heat have a mutuall dependance on each other & nor generation. Heat is a necessary condition to light & vegitation. * 6 nor substance so indifferently, subtily & swiftly pervades all things as light & nor spirit searches bodys so subtily piercingly & quickly as yt vegitable spirit. [* heat excits light & light excits heat, heat excites yt vegetable principle & that increasith heat.]

Of heat agitates ether & that agitated shins up light & heat, ether is agitated by rushing in wrinkled or by sudden extusion of light.

Of fire is either a flame a gross body whose parts are in avehement motion among themselves & excite it to emit light. or flame. the first either wants a principle of preserving that flame as coal iron or borrows it from an externall agent as coale or kalk it selfe as the sun. &c. The last is nothing but yt parts of flames burnd to coals.

cold & freezing have divers principles because a thing will freez without growing colder & grow colder without freezing. Cold is only rest & freezing is by an agent as fumes of lead coagulate & congelation is made when any agent fluidity is preserved by ye ethers agitation & smallness of pts. & composd of hard metallein globules Hardness & union of pts by ethers extrusion & their roughness.

Volatility & fixity.
Action of salts dissolving, promoting fusion, fighting, precipitating.
Divers liquors coagulated & liquified by divers causes as whites of eggs by heat & lime, cords &c
propension & aversion to mix.
pellucidity opacity. Elasticity. Expansiveness

Of ye contrivance of vegetables & animalls. of sensible qualitys. Of ye soules union

Of God. what ever I can conceive without a contradiction, either is or may ~~be~~ be made by something that is: I can conceive all my owne powers (knowledge, ~~[illegible]~~ acheiving matter &c) without assigning them any limits Therefore such powers either are or may be made to be.

Example. A body by accelerated motion may ~~become infinitly long~~ or transcend all ~~[illegible]~~ distance in any finite lim assigned. also it may become infinitly long. This if thou denyest it because thou apprehendst a contradiction in the notion of it if thou apprehendst none thou wilt grant it ~~[illegible]~~ the power of things.

Arg 2. The world might have been otherwise then it is (because there may be worlds otherwise framed then this) Thus therefore not necessary but a voluntary & free determination yt it should be as thus. And such a voluntary [cause must be a God] determination implys a God. If it be said yt wd could be not otherwise yn bi because bi determind by an eternall series of causes, yts to purpose not to answer ye 1st prop: for I meane not yt ye ⊕ might have been otherwise notwithstanding the precedent series of causes, but yt ye whole series of causes might from eternity have beene otherwise here, ~~because they should be otherwise~~ in other places

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Nothing can be changed from not it is without putrefaction. Of it without separations
no putrefaction can be without alienating changing the thing putrefyd from what it was
Nothing can be generated (but of putrifyd matter) ~~without first putrefaction~~
All putrefyd matter is capable of having something generated in it
All natures operations are first things of differing disposition. The most powr
agent acts not upon it selfe
Her first action is to blend & confound mixtures into a putrifyed Chaos
~~Then are they fitted for new generation or corruption~~
~~Else never works but with easy heat.~~
All things are corruptible
All things are generable
Nature only works in ye gentle substances
And wth a gentle heat

Art may set nature on work & promote her working in ye production
of any thing what ever: Nor is ye product less naturall then if nature had
produced it alone. As ye child artificiall because ye mother took physick, or a
tree less naturall which is planted in a garden & watered then that which
grows alone in ye field or if a carrass be put in a glasse & kept warm in B.M.
yt it may putrify are not less naturall as nature as others bred in a dish
without any such artifice.* Thus an oak may stand 100 years without rotting
But if it be scraped thin & kept moist & dry it may soon by art be
brought to dirt & prepared for a new generation. Thus mettals though in a
massy body & above ground where mineral humidity is but weak & thin are
in many memory observed to rot & though they may long persist in the earth w^th
corruption yet duly ordered & mixt with a due mineral humidity; may
by art soon rot & putrefy & consume (i.e. generat corruption &c)

Natures actions are either vegetable or mechanicall (gravitation motion, vulg
The principles of her vegetable actions are not other then the seminall vigors
those are her only agents, her fire, her soule, her life,
The seede of things is all that substance in them that is attained to the fullest
degree of maturity that heat is in that things So that there being nothing
more mature to act upon then they acquire.
Vegetation is nothing else but y^t acting of wt is most naturall or specifi
cate upon that wch is less specificate or mature to make it as mature
as it selfe And in that degree of maturity nature ever rests.
The portion fully mature in all things is but very small, & never to
be seene alone, but only as lie inclothed with watry humidity. The whole
substance is never naturall but only that pt of it wch is most disposed
to vegetation. The maine bulk being but a watry insipid substance in wch
rather then upon wch the action is performed
Putrefaction is ye reduction of a thing from yt maturity & specificalness it

had attained by gmrivation

1 All vegetables have a disposition to act upon other adventitious substances & alter them to their one temper & nature. And this is to grow in bulk as the alteration of ye nourishment may be called growth in verture & maturity or spiritfulness.

2 When ye nourishment has attained the same stake with the spricis transmuting the action ceaseth

3 And then is that body thus naturated able in like manner to act upon any new matter & transform it to its owne stak & temper. Hence ye more to ye little in whom is as agent to patical

But it is not the whole substance of this nourishment that is transformed or of ye spricis yt transforms but a very small substance in them both wch if it were separated ye mass would bee but a mixture of dead earth & insipid water.

4 This ye office of those grosser substances to bee medius or vehicles in wch rather than upon wch those vegetable substances perform their actions

8 Yt those grosser substances are very apt to put on various external appears according to the present stak of the invisible inhabitants as to appear like bones flesh wood fruit &c Namely they consisting of differing particles salin airy oyly spirituous &c those parts may be variously mixed one among another according to the aching of the vegetable substances & be variously associated & concatenated together by their influence

4 All these changes thus wrought in ye gmrivation of things so far as to sense may appear to bee nothing but mechanisme or severall dissolving & associating the pts of ye matter acted upon & that becaus severall changes to sense may be wrought by such ways without any intreading act of vegetation, Thus acid bio powders mixed with a 3d colour, yalmuthron, milk by a little agitation concert into one mass of butter May all ye operations in vulgar chymistry (many of wch to sense are as strange transmutations as those of nature) are but mechanicall coalitions or separations of particles as may appear in that they returne into their former natures if reconjoned or (where unequally volatile) dissolved, & yt without any vegetation.

5 So far therfore as ye same changes may bee wrought by the slight mutation of the textures of bodys in common chymistry & such like experiments may judge that such changes made by nature are done ye same way that is by ye slightly transposition of ye grosser corpuscles, for upon their disposition only sensible qualitys depend. But so fast as by vegetation such changes are wrought as cannot bee done without it wee must have recourse to som further cause And this first is vastly & fundamentale because nothing could ever yet bee made without vegetation wch nature useth to produce by it. [such ye instance of turning Iron into copper. &c.]

6 There is therfore besides ye sensible changes wrought in ye textures of ye grosser matter a more subtile secret & noble way of working in all vegetables which makes its products distinct from all others & ye immediate seate of lyfe

operations is not ye whole bulk of matter, but rather an exceeding subtile
& minute portion of matter diffused through the masse wch if it were separa
ted there would remain but a dead & inactive earth. And this appears in that
vegetables are deprived of their vegetable vertue by any small excesse of heat, the hidden spirit being either put to flight
or at least corrupted thereby (as may appear in an egg) whereas those opera
tions wch depend upon ye texture of ye grosser matter (as all those in com
mon chemistry do) receive noe damadge by heats far greater. Beside if
we consider an egg, noe doubt but when it is first sat upon the whole matter
in wch ye vegitive vertue resides is put into action wch if it were ye whole
substance ye rudiments would be spread all over wch yet is begun but in a very
little space

The vegitable spirit is radically the same in all things & differs but in
degree of digestion or maturity from the state of corruption, or as it
is applyed to grosse matter (or as metalls differ in their ripenes)

Hence it hes but one law of acting that is when the vegitable spirits are
in perpetuall working till they arrive at the state of thy be digested & if nothing hi
der they still proceed to ye state of the most digested where they infallibly sto
Hence it appears how nutrition is made yeough salts outwardly applyed
to metalls in divers states of digestion put on severall formes & acts accordin
manners wth grosser matter so other vegetable powers

In animals ye the putrefaction is not sensible, becaus it is continuall
& finely finished, & by but of a very small portion at once, a greater
portion at the same time being in order to maturity & a far greater portion then
that already mature, by whose contrary dispositions ly allayed as to ye production of
any sensible ferment, being contiguous acting the one upon the other
a confusion of the whole where all opposite qualities are alike powerfull to destroy
each other but the matter being much more mild, vitymultiplied by ye great plenty of the
body both in quality & power to convert it to its owne temper. This more like
ye putrefactive or fermentative of wine or bread or malt, & its putrefaction or
fermentation in turning to blood is insensible, yea & that more grosse in the stomach
& Without such putrefaction how can vermin breed in ye body & yet yt it is
insensible

These are exhalations dispersed from every pt of the body as well
as into ye aire & in this sense it may be said to be totum in toto & the like ye fathers
in sperm. And these emanations are the fountain of their sperm & perform ye same
office to ye body wch sperm doth in the production of an infant. preparing & distributing nourishment
for they being of the same nature wth ye body (excepting order) they might act after the same manner
upon whatever matter that is prepar'd.

Humores minerales continuò descendunt versus centrum terræ, nam aliqua ewⁿ aquâ insipida resolvuntur ut vitriola, alia per acidos spiritus.

Omnia metalla & minuralia possunt in aquosam formam resolvi, ~~et ad~~ ~~Dissolvitur ab aqua regia & alia metalla ab aqua fort & ☿ in acido ☉ & minera vitrioli~~ aliqua solvitur ab aqua fortana et ☉ minera vitrioli &c, et alia in acutis & corrosivis qualis sunt aceturn, spiritus salium et minerales

Ejusmodi ~~minerales~~ humiditates ubique reperiuntur versus centrum terræ decidentes Sic enim fossores observant guttas perpetim destillantes per latera fodinarum & cavitates rupium aquarum plenas ~~inveniunt~~ inveniunt

Hujusmodi aquæ ~~non possunt~~ inter descensus metallis et minerabus occurrentes paulatim corrodent eas, et quod possunt resolvere secum deferunt. Et hinc ~~non~~ aquæ vitriolicæ variis metallis et substantijs minerabus repletæ non solùm in fodinis observantur sed etiam in fontibus quamplurimis quarum aquæ per minerales regiones transeuntes ejus, modi solutiones perpetuò destillando se immiscent unde virtutes medicas nanciuntur. Quinetiam ☉ aquæ impregnatæ reperiuntur

Aquæ sic decidentes per calcarium terræ ~~ca~~ in vapores ~~p~~ paulatim resolvuntur et sursum ascendent iterum atque iterum descendunt ut prius, perpetim circulando (atque quæ sunt multò minus volatilia) ascendunt vacuæ. ~~Dum~~

In ascensu vero derelinquunt minutia soluta sic videmus in destillatione solutionis alicujus metallici ~~cum fixiora sint quam~~ quod solvens facilè ascendit sed metallus nunquam nequaquam licet igne urgeas fortissimo. ~~Aut enim manebit mera qua in chrystallos redig~~ et multò minùs a terra calor ascendent. At siquis valet ejusmodi solventes tam acutas quam &c Rogo 1 quare vulgares chemici cum menstruis fortissimis hoc non possunt. 2 An ob tantam volatilitatem metallus non destruitur. 3 An et quomodo vertes coagulatur 4 Cùm solutiones in minuris reperta, vel aquæ fontium minerabus tinctæ destillantur non ascendunt, et quidem spiritus minerabi immixtus aqua qui citissimè ascendit sed ~~ista~~ est spiritus dissolvens et non minerale dissolutum

Hinc metallis continuò deorsum delatis et ~~in metallica~~ cum sunt metalla nunquam ascendentibus ~~minerabus fossa detracta in tot metallitatem deducantur~~: necessarium est ut intra paucos annos maxima pars a superiori terrâ evanescant, nisi denovo generari concedantur.

Metalla nullo artificio ● in tantam volatilitatem ● deduci possunt ● ut ● cum calore brumali ad modum vaporis ascendant. Ejusmodi naturalia metalla licet amiserint. Tum quia aliq ellen non possunt ita alterare, tum quia apparent et ~~possit~~ alterari ~~apparent~~ per destructionem formæ metallicæ ~~fossil~~ ~~alterari~~ ~~spiritus~~ ~~metallicus~~ * ingr nulla aqua in viscenibus terræ ~~Hinc spiritum~~ lachrymas observari potuere quæ tantam habuere volatilitatem.

In ascensu ergo &c Hinc metallis &c

Necesse est ergo ut fumi vel spiritus metallici ad superiora usquequaque ascendant en quotidiana generatio

Quandiam spiritus isti solutionibus metallicis occurrunt et secum illis misceant et cum sunt in statu motus et vegetationis, putrefacit, formam metallicam destruit et ● in spiritum sibi similem vertunt. Qui rursus dum possunt similiter ascendere et descendere continua circulatio metallorum.